CONTENTS

INTRODUCTORY REMARKS

Bernardi, G. 1–2
'From the double helix to the human genome: 40 years of molecular genetics'

OPENING SESSION

Jacob, F. 5–7
Genetics and the twentieth century

Perutz, M.F. 9–13
Before the double helix

Crick, F. 15–18
Looking backwards: a birthday card for the double helix

Judson, H.F. 19–23
Frederick Sanger, Erwin Chargaff, and the metamorphosis of specificity

GENOME ORGANIZATION AND EVOLUTION

Orgel, L.E. 27
Genome organization and evolution

de Duve, C. 29–31
The RNA world: before and after?

Cech, T.R. 33–36
The efficiency and versatility of catalytic RNA: implications for an RNA world

Eigen, M. 37–47
The origin of genetic information: viruses as models

Arber, W. 49–56
Evolution of prokaryotic genomes

Bernardi, G. 57–66
The isochore organization of the human genome and its evolutionary history – a review

Cohen, S.N. 67–76
Bacterial plasmids: their extraordinary contribution to molecular genetics

Thomas, R. 77–79
The denaturation of DNA

GENOME FUNCTIONS

Klug, A. 83–92
Protein designs for the specific recognition of DNA

Tocchini-Valentini, G.P., Baldi, M.I., Gandini-Attardi, D. and Mattoccia, E. 93–97
Cleavage site recognition by the tRNA splicing endoribonuclease

Rich, A. 99–109
DNA comes in many forms

Mirzabekov, A.D. 111–118
Chromatin structure: mapping proteins associated with genomic DNA using crosslinking

Felsenfeld, G. 119–124
Chromatin structure and the expression of globin-encoding genes

Falaschi, A., Giacca, M., Zentilin, L., Norio, P., Diviacco, S., Dimitrova, D., Kumar, S., Tuteja, R., Biamonti, G., Perini, G., Weighardt, F., Brito, J. and Riva, S. ... 125–135
Searching for replication origins in mammalian DNA

Gilbert, W. and Glynias, M. 137–144
On the ancient nature of introns

GENOME DYNAMICS

Campbell, A.M. 147–151
Genetic recombination in the molecular era

Romani, M., Casciano, I., Querzola, F., De Ambrosis, A. and Siniscalco, M. 153–160
Analysis of a viral integration event in a CG-rich region at the 1p36 human chromosomal site

Ehrlich, S.D., Bierne, H., d'Alençon, E., Vilette, D., Petranovic, M., Noirot, P. and Michel, B. 161–166
Mechanisms of illegitimate recombination

Zachau, H.G. 167–173
The immunoglobulin κ locus – or – what has been learned from looking closely at one-tenth of a percent of the human genome

Skalka, A.M. 175–182
Retroviral DNA integration: lessons for transposon shuffling

Singer, M.F., Krek, V., McMillan, J.P., Swergold, G.D. and Thayer, R.E. 183–188
LINE-1: a human transposable element

Klein, G. 189–196
Multistep evolution of B-cell-derived tumors in humans and rodents

GENETICS OF DEVELOPMENT AND TRANSGENIC ORGANISMS

Zatloukal, K., Schmidt, W., Cotten, M., Wagner, E., Stingl, G. and Birnstiel, M.L. 199–207
Somatic gene therapy for cancer: the utility of transferrinfection in generating 'tumor vaccines'

Littauer, U.Z. 209–214
Reflections on RNA

Gehring, W.J. 215–221
Exploring the homeobox

Chambon, P. 223–228
The molecular and genetic dissection of the retinoid signalling pathway

Grigorian, M.S., Tulchinsky, E.M., Zain, S., Ebralidze, A.K., Kramerov, D.A., Kriajevska, M.V., Georgiev, G.P. and Lukanidin, E.M. 229–238
The *mts1* gene and control of tumor metastasis

Saedler, H. and Huijser, P. 239–243
Molecular biology of flower development in *Antirrhinum majus* (snapdragon)

Schell, J., Koncz, C., Spena, A., Palme, K. and Walden, R. 245–249
Genes involved in the control of growth and differentiation in plants

Starlinger, P. 251–255
What do we still need to know about transposable element *Ac*?

GENOME PROJECTS

Dulbecco, R. 259–260
The human genome project and cancer

Berg, P. 261–264
Reverse genetics: directed modification of DNA for functional analysis

Matsubara, K. and Okubo, K. 265–274
cDNA analyses in the human genome project

Weissenbach, J. 275–278
A second generation linkage map of the human genome based on highly informative microsatellite loci

Szybalski, W. 279–290
From the double-helix to novel approaches to the sequencing of large genomes

ETHICAL AND LEGAL ISSUES

Grisolia, S. 293–294
Co-Chairman's Remarks

Zinder, N.D. 295–298
Patenting cDNA 1993: efforts and happenings

Sgaramella, V. 299–302
Lawyers' delights and geneticists' nightmares: at forty, the double helix shows some wrinkles

CLOSING SESSION

Gros, F. 305–308
Jim Watson: the double helix, messenger RNA and the Human Genome Project – a personal view

Watson, J.D. 309–315
Looking forward

Mayor, F. 317–318
'From the double helix to the human genome: 40 years of molecular genetics'

Participants in the Symposium – Photographs and Curriculae Vitae 319–333

Contents Vol. 135 335–336

Author Index, Vol. 135 (1993) 337–338